

MM-1000

MM-1000 SERIES RECORDER/REPRODUCER

The MM-1000 series of multichannel professional audio tape recorders is designed to meet the demands of creative engineering and performing talent for operational features, performance, reliability, flexibility and versatility. Available in three configurations; 8, 16, and 24 channels. The basic 8-channel recorder/reproducer can be readily expanded to 16 or 24 channels without obsoleting any of the original components. Designed for videotape recording and field proven by more than 3000 units in service, the transport properly handles both 1- and 2-inch tape. Modular electronics, similar to the proven AG-440 system, assure trouble-free operation and easy maintenance.

FEATURES:

Transport convertible from 1-inch to 2-inch tape, tape motion sensing with logic and memory circuits; automatic tape lifters with manual override, accommodates 10- $\frac{1}{2}$ -, 12- and 14-inch reels, reset-table tape position index. Remote SEL-SYNC® capability on all channels.

SPECIFICATIONS:

Signal/Noise Ratio:

7-1/2, 15 ips: 60 dB min, 8- and 16-channel
55 dB min, 24-channel

Frequency Response—overall:

15 ips: ± 2 dB, 30 Hz—18 kHz
7-1/2 ips: ± 2 dB, 30 Hz—15 kHz

Flutter:

18 ips: below 0.08% rms
7-1/2 ips: below 0.17% rms

Third Harmonic Distortion:

7-1/2, 15 ips: below 1.1% at normal operating level.

Crosstalk:

50 dB min, 8 and 16 channels at 500 Hz
45 dB min, 24 channels at 500 Hz

Timing Accuracy:

$\pm 0.1\%$ (± 1.8 seconds in 30-minute record time)

Start Time:

Tape at full speed in less than 0.5 second.

*SEL-SYNC™ Ampex Corporation



MM-800

MM-800 RECORDER/ REPRODUCER

New to the MM Series, the MM-800 recorder/reproducer affords the professional recording studio an outstanding eight-channel specialist in the multichannel realm. This eight-channel sophisticate is a worthy member of the established MM Series, with identifiable family features such as modular, low-noise electronics and remote Sel-Sync.

Further, the MM-800's servo-controlled transport introduces a finesse in one-inch tape handling that can be considered a breakthrough for professional audio recording equipment.

FEATURES:

Low-noise electronics with calibration settings and electronics adjustments through front panels. Plug-in printed circuit boards. Servo-controlled transport mechanically adjustable from front. Remote control with Sel-Sync standard.

SPECIFICATIONS:

Signal/Noise Ratio:

30 ips: 62 dB min
7-1/2, 15 ips: 60 dB min

Frequency Response:

30 ips: ± 1 dB, 100 Hz—20,000 Hz
 ± 2 dB, 50 Hz—20,000 Hz
15 ips: ± 2 dB, 30 Hz—18,000 Hz
7-1/2 ips: ± 2 dB, 40 Hz—15,000 Hz

Flutter:

30 ips: below 0.05% rms
15 ips: below 0.08% rms
7-1/2 ips: below 0.1% rms

Distortion:

Second harmonic distortion of a 500 Hz signal recorded at peak record leveling less than 0.4%.

Cross Talk:

Better than 50 dB min at 500 Hz

Timing Accuracy:

$\pm 0.2\%$ (± 3.6 seconds in 30-minute recording time.)



AG-440B

AG-440B SERIES RECORDER/REPRODUCER

Long the standard of the broadcast industry, the AG-440B series is a complete family of rack mounted, console and heavy-duty portable recorders for the most exacting applications. Offering versatility and performance unsurpassed, the AG-440B consists of a three-motor, pushbutton relay-solenoid-operated, dual-speed transport; separate solid-state electronics chassis for each channel with separate plug-in record, reproduce and bias amplifiers; built-in SEL-SYNC® system; automatic equalization change and a high-quality Ampex four-position head assembly.

FEATURES:

Die-cast aluminum top-plate, high speed conversion between $\frac{1}{4}$ -inch and $\frac{1}{2}$ -inch tape; low impedance heads, jewel bearing scrape flutter idlers, electronics modules plug-in from the front, set-up adjustments made from the front, plug-in equalizers, three edit modes, rapid maintenance, 10- $\frac{1}{2}$ -inch reel capacity.

SPECIFICATIONS:

Signal/Noise Ratio:

Speed	Full Track	2 Track	4 Track
15 ips	66 dB	63 dB	60 dB
7-1/2 ips	66 dB	63 dB	60 dB
3-3/4 ips	63 dB	56 dB	56 dB

Frequency Response—overall:

15 ips: ± 2 dB, 30 Hz—18 kHz
7-1/2 ips: ± 2 dB, 40 Hz—15 kHz
3-3/4 ips: ± 2 dB, 4 dB, 50 Hz—7.5 kHz

Flutter:

Speed	Percentage
15 ips	below 0.08% rms
7-1/2 ips	below 0.1% rms
3-3/4 ips	below 0.15% rms

Playback Timing Accuracy:

$\pm 0.2\%$ (± 3.6 seconds in 30 minutes recording time).

COVER: Our catalog cover is a photographically abstracted illustration of a 24-track recording head from an MM-1000-24 Recorder/Reproducer.



AG-440-8

AG-440-8 MASTER RECORDER/REPRODUCER

The highly reliable AG-440 is available in an 8-track configuration using one-inch tape. This fine instrument features all the reliability and maintenance ease of the standard AG-440B. The ribbed, die-cast top plate provides rigidity essential to permanent tracking alignment. The new AG-440-8 has operating features of the 1- to 4-track units, plug-in high torque reeling motors and instrumentation type locking hold-down knobs for NAB 10-1/2-inch reels.

SPECIFICATIONS:

Signal/Noise Ratio:

7-1/2, 15 ips: 60 dB

Frequency Response—overall:

15 ips: ± 2 dB, 30 Hz–18 kHz

7-1/2 ips: ± 2 dB, 40 Hz to 10 kHz; ± 2 dB, 40 Hz to 15 kHz

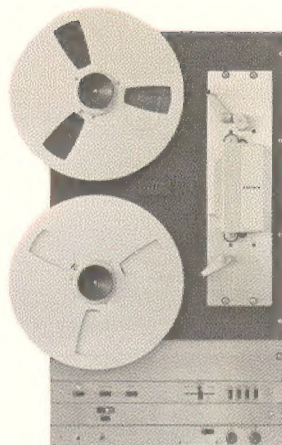
Flutter:

15 ips: below 0.08% rms

7-1/2 ips: below 0.1% rms

Crosstalk:

Better than 65 dB at 500 Hz



ABR-15

ABR-15 BROADCAST RECORDER/REPRODUCER

Designed specifically for broadcasters, the bi-directional ABR-15 is a symmetrical audio recorder. All mechanical and electrical devices are duplicated to provide complete bidirectional operation for flexibility in automated and semi-automated applications. Unidirectional models are also available. Quick tape start times allow more precise cue control. The ABR-15 accepts reels of up to 15 inches diameter for unattended program automation systems.

FEATURES:

Bidirectional drive for flexible performance in broadcast automation application, direct drive system maintains precise tape speeds, variable fast forward/reverse search control.



ABR-10

ABR-10 BROADCAST RECORDER/REPRODUCER

Same reliable bi-directional, symmetrical design as the ABR-15 Recorder/Reproducer. The versatile and dependable ABR-10 answers today's needs in unattended program automation system—at a reasonable cost. Reels from 5 to 10-1/2 inches can be used on either the record/reproduce mode or the reproduce-only model. As with the ABR-15, adjacent speed pairs may be chosen from five speeds, 15/16 to 15 ips. A completely separate servo-controlled tape tension system automatically adjusts torque of reel motors for correct tension without adjustment.

FEATURES:

Same features as ABR-15 including servo-controlled precise tape tension, quick start/stop times, engineered for easy calibration and operation—unbeatable reliability at reasonable cost.

SPECIFICATIONS:

With exception of 5-inch to 10-1/2-inch reel sizes, ABR-10 Recorder/Reproducer specifications are identical to those of the ABR-15.

Signal/Noise Ratio:

7-1/2, 15 ips: 66 dB full, 63 dB half, and 57 dB quarter track

3-3/4 ips: 63 dB full, 63 dB half, and 57 dB quarter track

1-7/8 ips: 45 dB half, and 42 dB quarter track

15/16 ips: 40 dB half, and 40 dB quarter track

Frequency Response:

15 ips: ± 2 dB, 30 Hz–18 kHz

7-1/2 ips: ± 2 dB, 40 Hz–15 kHz

3-3/4 ips: ± 2 dB, 40 Hz–10 kHz

1-7/8 ips: ± 3 dB, 40 Hz–10 kHz

15/16 ips: ± 3 dB, 100 Hz–5 kHz

Flutter:

15 ips: 0.1 %

7-1/2 ips: 0.15%

3-3/4 ips: 0.18%

1-7/8 ips: 0.25%

15/16 ips: 0.4 %

Start Time:

Operating speed attained in 0.1 second.



MINI-MIXER

MINI-MIXER

The Mini-Mixer (Cat. No. 4020279) is an ABR Series accessory similar in size and shape to the recorders' Control and Electronics modules. Its purpose is to add a mixing capability to an ABR recorder if the need arises. The input to a Mini-Mixer may be either a microphone, phonograph pick-up, or balanced or unbalanced line input. Up to four inputs are accepted, and

accessory plug-in amplifiers or transformers can be added as required.

The Mini-Mixer contains two dual-input amplifiers whose outputs may be separate or summed by means of a panel rocker switch, thus providing capability for four inputs to a single output or two inputs to each of two outputs. Active circuit mixing is used to minimize signal-to-noise degradation and power is obtained from the electronics chassis. To accommodate other than line level input signals, a microphone preamplifier or a phonograph preamplifier is required. Balanced line inputs may be accommodated with the use of 20,000 ohms bridging transformer or a 600-ohm matching transformer.



AG-600

AG-600 SERIES RECORDER/REPRODUCER

A smaller, all solid-state version of the earlier 600 Series, the AG-600 offers field versatility with studio reliability. It is available in single channel (full or half track mono) or two channel (half or quarter track stereo/mono) portable or rack mount. It is ideal for broadcast, industrial, educational, religious, medical and government applications.

FEATURES:

Two-speed transport, three-digit counter, die-cast aluminum top plate, new solid-state electronics, two inputs each channel, set up controls at front panel.

SPECIFICATIONS:

Frequency Response:

7-1/2 ips: +2 dB -4 dB from 40 Hz-15 kHz
3-3/4 ips: +2 dB -4 dB from 40 Hz- 8 kHz

Signal/Noise:

7-1/2 ips: Full track 57 dB; half track 55 dB
3-3/4 ips: Full track 52 dB; half track 50 dB

Crosstalk Rejection:

Better than 40 dB mid-frequency

Flutter:

7-1/2 ips: below 0.17%
3-3/4 ips: below 0.25%

Size & Weight: (In Portable Case)

Single channel-28 lb: 14-3/4 inches H x 13 inches W x 8-3/4 inches D
Dual channel-42 lb: 19-1/2 inches H x 13 inches W x 8-3/4 inches D



AG-500

AG-500 SERIES RECORDER/REPRODUCER

A full studio quality solid-state professional recorder, the AG-500, is supplied in a rugged portable case or for rack mounting. It is available in single or two channels in a choice of dual speed arrangements. Designed for broadcast use, the AG-500 is also ideal for schools, motion picture studios, government operations and medical and industrial research.

FEATURES:

Precision milled die-cast top-plate, relay solenoid operated, remote controllable, eddy current clutches, front panel electronic adjustments, four position head assembly, two line inputs per channel.

SPECIFICATIONS:

Overall Frequency Response:

15 ips: ± 2 dB, 30 Hz-18 kHz
7-1/2 ips: +2 dB -4 dB, 30 Hz-15 kHz
3-3/4 ips: +2 dB -4 dB, 40 Hz- 8 kHz

Signal/Noise Ratio:

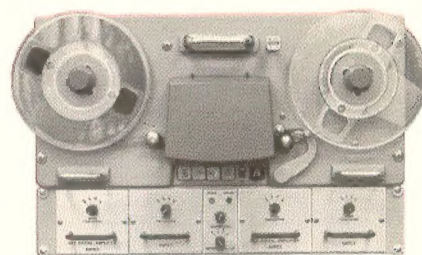
55 dB at 15 and 7-1/2 ips (half track or two track)
60 dB at 15 and 7-1/2 ips (full track)
55 dB at 3-3/4 ips (full track)

Flutter and Wow:

Less than 0.15% rms at 15 ips
0.18% rms at 7-1/2 ips
0.25% rms at 3-3/4 ips

Weight & Dimensions:

1 channel portable-42 lb: 20 inches W x 9-1/4 inches D x 14-5/8 inches H
2 channel portable-52 lb: 20 inches W x 9-1/4 inches D x 18-1/8 inches H



GS-80B

GS-80B DATA RECORDER/REPRODUCER

Analog or digital information can be recorded with the simplicity of audio recording using this rugged, versatile unit. It couples a field-proven transport with all solid-state electronics in a modular package.

FEATURES:

Modular all solid-state audio or NRZ digital electronics, same two-speed transport as AG-500, speed pairs selectable from 1-7/8 to 7-1/2 ips, hysteresis synchronous motor, four position head assembly.

SPECIFICATIONS:

Reproduce Timing Accuracy:

$\pm 0.25\%$ at 7-1/2 ips; $\pm 0.33\%$ at 5-5/8 ips;
 $\pm 0.4\%$ at 3-3/4 ips; $\pm 0.6\%$ at 1-7/8 ips;
 $\pm 1.0\%$ at 15/16 ips

Digital Record/Reproduce System (One to Four Channels) NRZ Transfer Rate:

7-1/2 ips: 5,000 BPS maximum
5-5/8 ips: 3,750 BPS maximum
3-3/4 ips: 2,500 BPS maximum
1-7/8 ips: 1,250 BPS maximum
15/16 ips: 625 BPS maximum

Audio Record/Reproduce System (One to Four Channels) Frequency Response:

7-1/2 ips: ± 2 dB, 100 Hz-12 kHz;
 ± 4 dB, 100 Hz-15 kHz
3-3/4 ips: ± 2 dB, 100 Hz- 6 kHz;
 ± 4 dB, 100 Hz- 8 kHz
1-7/8 ips: ± 2 dB, 100 Hz- 3 kHz;
 ± 4 dB, 100 Hz- 4 kHz

Tape Speeds:

Two speeds selectable from front panel.
7-1/2 and 3-3/4, 7-1/2 and 5-5/8
3-3/4 and 1-7/8, 1-7/8 and 15/16 ips

Start Time:

less than 0.5 second.

Stop Time:

less than 0.3 second.



AA-620

AA-620 AMPLIFIER/SPEAKER

A portable amplifier/speaker designed primarily for remote or studio use where high-quality monitoring or sound reproduction in lightweight package is required. For use with professional portable recording equipment such as the AG-600 and AG-500, or as studio monitor. The AA-620 is ideal for broadcast, audio-visual applications in education and industry, medical and commercial sound applications.

FEATURES:

Two-speaker system in tuned enclosure, separate bass-treble equalizers, solid-state electronics, essentially flat from 65 Hz to 10 kHz. 15-watt output.

SPECIFICATIONS:

Overall Frequency Response (acoustical):

Essentially flat acoustically, range better than 65 Hz–10 kHz

Speakers:

10-inch Woofer; 3-1/2-inch Tweeter

Power Output:

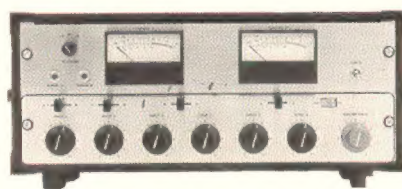
15 watts into an 8-ohm resistive load

Signal/Noise Ratio:

Amplifier noise (including hum), 80 db below rated output.

Size & Weight:

Portable—24-1/4 lb; 14-3/4 inches H, 20-1/8 inches W, 9 inches D



AM-10 with Accessory Meter Panel

AM-10 STEREO/MONO MIXER

A professional quality, compact, six-position, two-channel mixer for studio or portable use, the AM-10 is ideal for broadcast studio, motion picture studio, schools, government, medicine, and industrial applications.

FEATURES:

All solid-state, regulated power supply, four mic and two line inputs feed A, B, or A and B output channels, separate gain controls, reset indicators, mixers can be coupled, rack or console overbridge mounting or case-mounted with an accessory meter panel.

SPECIFICATIONS:

Frequency Response:

± 1 dB, 30 Hz – 20 kHz

Distortion:

Microphone Input: +12 dBm output level, less than 0.5% THD from 100 Hz–10 kHz

Line Input: +12 dBm output level, less than 0.5% from 50 Hz–10 kHz

Crosstalk Rejection:

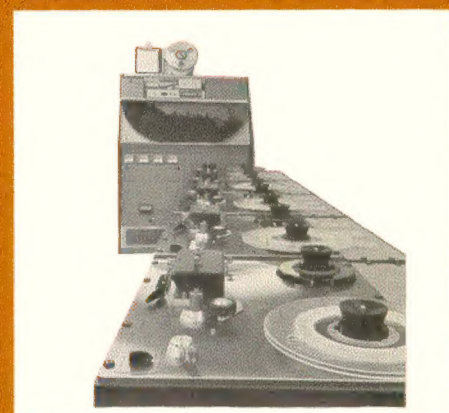
65 dB at 500 Hz. Greater than 40 dB from 20 Hz–20 kHz



"Mini-Studio" Systems

"MINI-STUDIO" SYSTEMS

AG-500 and AG-600 professional recorder/reproducers in combination with Ampex system-matched accessories become compact, portable field studios. Systems are assembled using one or more recorders, AA-620 amplifier/speakers, AM-10 stereo/mono mixer, with microphones and accessories as needed.



CUSTOM AUDIO

Standard products shown in this catalog can be modified to meet special requirements through the facilities of Ampex Special Products Division. Individual products or complete systems can be manufactured.

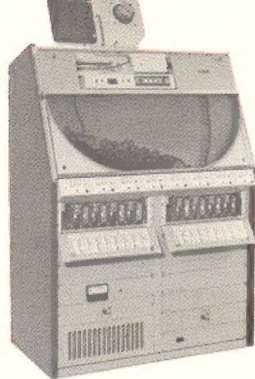
Quotations on special requirements can be obtained through your Ampex franchised Professional Audio distributor, or from the nearest Ampex District Office.



MM-1005

MM-1005 REPRODUCER

New flexibility for mix-down creative sessions is now available with a playback-only version of the proven MM-1000 Recorder/Reproducer. The low cost MM-1005 Reproducer frees the MM-1000 for studio sessions. The MM-1005 meets the most exacting specifications and enjoys complete compatibility with the MM-1000 and other professional multichannel recorders. Plug-in head assemblies allow easy change in the field from 8- to 16- or 24-channel configurations. An optional VU meter rack installs above the MM-1005 transport for viewing ease.



BLM-200

BLM-200 DUPLICATOR SYSTEMS

The BLM-200 Duplicator System provides high-speed production of multichannel cassette or cartridge tapes. Designed on a flexible "building block" principle to provide for future expansion, the basic BLM-200 master will drive up to ten slaves or, with minor modifications, up to twenty slaves. The BLM-200 master assembly is a self-contained bin-loop system that eliminates rewinding of tape, permitting automatic duplication. It reproduces four or eight tracks to provide easy conversion between cartridge and cassette duplication.

FEATURES:

Duplication to reel-time ratio is 16:1, produces 4- or 8-track cartridge or 4-track cassette copies, on-site conversion from 4- to 8-track formats, easy loading and automatic self-cueing of bin-loop, turn-around guides for either 150-mil or 250-mil tape on slaves, slave head assemblies and controls are quickly interchangeable.

SPECIFICATIONS:

Frequency Response:

7-1/2 ips master: ± 1 dB, 500 Hz–160 kHz (30 Hz–10 kHz real speed)
3-3/4 ips duplicated copies: ± 2 dB, 50 Hz–8 kHz

Crosstalk Rejection:

Better than 50 dB

Signal/Noise Ratio:

Better than 10 dB below a blank, biased Ampex 404
Series Low-Noise Professional Audio Tape; 500 Hz–80 kHz (30 Hz–5 kHz at real speed) better than 6 dB up to 160 kHz (10 kHz).

Flutter:

Less than 0.1% rms (ASA weighted)

Maximum Tape Capacity:

Master Bin-Loop: 1200 feet
Slave Assembly: 14-inch-diameter reel



3000 Series Duplicator

3000 SERIES TAPE DUPLICATOR SYSTEMS

3000 series duplicator systems offer high-speed, high-quality duplication in single or mass production runs. Full, half or two track mono tapes are produced with 3200 units, quarter track stereo with 3300. 3000 series systems are ideal for duplicating pre-recorded music, radio program material, commercials, religious and instructional material.

FEATURES:

Up to 120 hours of program material per slave per 8 hour operation, 1:1 or 2:1 dubs at 30 or 60 ips, handles 14-inch reels, master and slaves equipped with full controls, slaves may be added at any time (up to 10 max.). Duplicates both single and two track masters in one pass of tape. Output approximately 10 reels per hour, per slave.

SPECIFICATIONS:

Frequency Response:

Maximum deviation from master tape:

Playing Speed Duplicated Copies	Frequency Range	Maximum Deviation
15 ips	50 Hz–20 kHz	+2-4
7-1/2 ips	50 Hz–15 kHz	+2-4
3-3/4 ips	50 Hz–7-1/2 kHz	+2-4

Crosstalk Rejection:

50 dB

Signal/Noise Ratio:

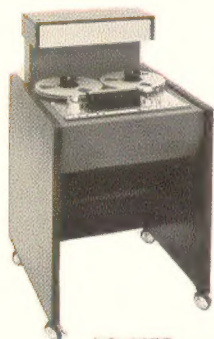
Will not introduce more than 3 dB noise on duplicates.

Flutter and Wow:

Will not introduce more than 0.15 rms in duplicates (measured by ASA standard).

Dimensions and Shipping Weight:

Master reproducer 26x25-1/2x60 inches, 430 lb
Duplicator 26x25-1/2x36 inches, 205 lb



AG-445B

AG-445B REPRODUCER

Reproducer-only version of the AG-440B series, the AG-445B has the same features and specifications and the same high quality. The units are convertible between 1/4-inch and 1/2-inch tape and are available in console or un-mounted versions. The same basic overbridge electronics chassis will accept from one to four channels of individual reproduce electronics. Applications include automated radio stations, commercial and industrial music systems and others where the highest quality playback of prerecorded information is needed.